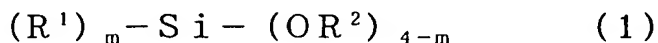
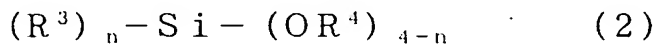


CLAIMS

1. A stain resistant coating composition which comprises (A) an aliphatic sulfonic acid compound or an amine salt of aliphatic sulfonic acid compound, (B) a compound having in the molecule at least one functional group selected from the group consisting of carboxyl group, carboxylic acid anhydride group and carboxyl group blocked with an alkylvinyl ether compound, (C) an organosilicate represented by formula (1):



, wherein R^1 and R^2 are each hydrogen atom, an alkyl group having 1 to 10 carbon atoms or an aryl group having 1 to 10 carbon atoms and m is 0 or 1, and/or a condensate thereof, and (D) a resin having in the molecule one or more epoxy groups and/or alkoxy silyl groups, as indispensable components, and optionally (E) a dispersing component of at least one inorganic oxide sol selected from the group consisting of aluminum oxide sol, silica sol, zirconium oxide sol and antimony oxide sol and/or (F) a modified resin having a modified part derived from an organosilicate represented by formula (2):



, wherein R^3 and R^4 are each hydrogen atom, an alkyl group having 1 to 10 carbon atoms or an aryl group having 1 to 10 carbon atoms and n is 0 or 1, and/or a condensate thereof, and an acrylic resin structure part having in the molecule one or more hydroxyl group, or both of one or more hydroxyl group and one or more epoxy groups.

2. The stain resistant coating composition as claimed in claim 1, wherein the aliphatic sulfonic acid compound of ingredient (A) has an alkyl group of 4 to 30 carbon atoms, and

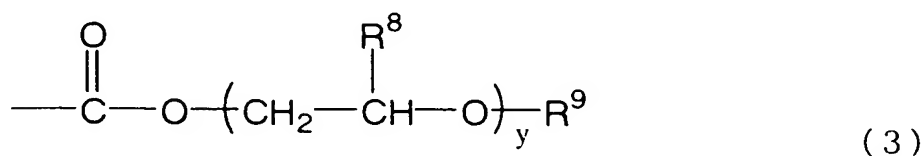
the content of ingredient (A) is in the range from 0.05 to 10 percents by weight based on the total amount of all nonvolatile matters of ingredients (A) through (F).

3. The stain resistant coating composition as claimed in claim 1 or claim 2, wherein ingredient (B) has in the molecule two or more carboxyl groups and/or two or more carboxyl groups blocked with an alkylvinyl ether compound, and the content of ingredient (B) is in the range from 3 to 80 percents by weight based on the total amount of all nonvolatile matters of ingredients (A) through (F).

4. The stain resistant coating composition as claimed in any one of claims 1 through 3, wherein a weight average molecular weight of the organosilicate condensate of ingredient (C) is 500 to 10000, and the content of ingredient (C) is in the range from 0.1 to 30 percents by weight based on the total amount of all nonvolatile matters of ingredients (A) through (F).

5. The stain resistant coating composition as claimed in any one of claims 1 through 4, wherein ingredient (D) is an acrylic resin having in the molecule two or more epoxy groups, and the content of ingredient (D) is in the range from 3 to 80 percents by weight based on the total amount of all nonvolatile matters of ingredients (A) through (F).

6. The stain resistant coating composition as claimed in any one of claims 1 through 5, wherein the acrylic resin structure part in the modified resin of ingredient (F) has one or more organic groups represented by formula (3):



, wherein R^8 and R^9 are each hydrogen atom or an alkyl group having 1 to 4 carbon atoms and y is an integer from 1 to 10.

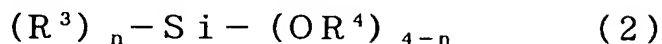
7. The stain resistant coating composition as claimed in any one of claims 1 through 6, wherein the nonvolatile matter of the inorganic oxide sol of ingredient (E) is a composite having a structure of core/shell coated with an acrylic polymer, and the content of the nonvolatile matter of ingredient (E) is in the range from 1 to 100 parts by weight based on 100 parts by weight of all nonvolatile matters of ingredients (A), (B), (C) and (D).

8. The stain resistant coating composition as claimed in any one of claims 1 through 7, wherein the weight average molecular weight of the organosilicate condensate used for the modified resin of ingredient (F) is 200 to 2000, and the content of the modified resin of ingredient (F) is in the range from 1 to 100 parts by weight based on 100 parts by weight of all nonvolatile matters of ingredients (A), (B), (C) and (D).

9. A method of coating which comprises applying a top coating composition comprising a pigment and the stain resistant coating composition as claimed in any one of claims 1 through 8 on a coated article, wherein the content of the pigment is in the range from 0 to 200 parts by weight based on 100 parts by weight of all nonvolatile matters of ingredients (A) through (F).

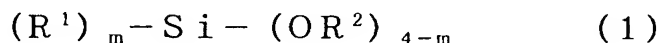
10. A stain resistant coating composition, which comprises (F') a modified resin prepared by polymerizing a mixture of polymerizable monomers for an acrylic resin synthesis containing a hydroxyl group-containing radical polymerizable monomer or both of a hydroxyl group-containing radical polymerizable monomer and an epoxy group-containing radical polymerizable monomer, in the presence of an organosilicate

represented by formula (2):



, wherein R^3 and R^4 are each hydrogen atom, an alkyl group having 1 to 10 carbon atoms or an aryl group having 1 to 10 carbon atoms and n is 0 or 1, and/or a condensate thereof, and optionally (B) a compound having in the molecule at least one functional group selected from the group consisting of carboxyl group, carboxylic acid anhydride group and carboxyl group blocked with an alkylvinyl ether compound.

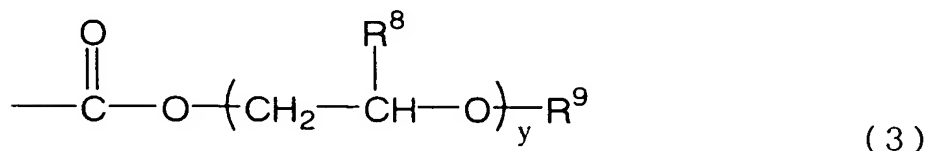
11. The stain resistant coating composition as claimed in claim 10, which comprises further an organosilicate represented by formula (1):



, wherein R^1 and R^2 are each hydrogen atom, an alkyl group having 1 to 10 carbon atoms or an aryl group having 1 to 10 carbon atoms and m is 0 or 1, and/or a condensate thereof.

12. The stain resistant coating composition as claimed in claim 11, wherein the content of ingredient (F') is in the range from 3 to 80 percents by weight, the content of ingredient (B) is in the range from 3 to 80 percents by weight, and the content of ingredient (C) is in the range from 0.1 to 30 percents by weight.

13. The stain resistant coating composition as claimed in any one of claims 10 through 12, wherein the acrylic resin structure part in the modified resin of ingredient (F') has one or more organic groups represented by formula (3):



, wherein R^8 and R^9 are each hydrogen atom or an alkyl group having 1 to 4 carbon atoms and y is an integer from 1 to 10.

14. A method of coating which comprises applying a top coating composition comprising a pigment and the stain resistant coating composition as claimed in any one of claims 10 through 13 on a coated article, wherein the content of the pigment is in the range from 0 to 200 parts by weight based on 100 parts by weight of all nonvolatile matters of ingredients (F'), (B) and (C).

15. A method of coating a substrate with a multilayer paint film which comprises by applying a colored film forming composition on the substrate to form a base coat, followed by applying a clear film forming composition on the base coat to form a clear top coat, wherein the top coat clear film forming composition alone or both of the top coat clear film forming composition and the colored film forming composition comprises the coating composition as claimed in any one of claims 1 through 14.

16. A method of coating which comprises applying a colored base coating composition on a substrate, followed applying an under clear coating composition on the uncured base coat, and baking the base coat and the under clear coat, and then applying an over coat clear coating composition on the under clear coat and baking the over clear coat, wherein the under clear coating composition is selected from the group consisting of an acrylic resin /aminoplast resin coating composition, an acrylic resin /urethane resin hardner coating composition and an acrylic resin /aminoplast resin /urethane resin hardner coating composition, and the over coat clear coating composition comprises the

coating composition as claimed in any one of claims 1 through 14.

17. The method of coating as claimed in claim 16, which comprises applying a colored base coating composition on a substrate, followed applying an under clear coating composition on the uncured base coat, and baking the base coat and the under clear coat, and then applying an over coat clear coating composition on the under clear coat and baking the over clear coat, wherein the under clear coating composition comprises a resin mixture of 40 to 80 percents by weight of (a) a hydroxyl group-containing and epoxy group-containing acrylic resin, 0 to 60 percents by weight of (b) an aminoplast resin and 0 to 60 percents by weight of (c) an urethane resin hardner as main component.

18. A coated article applied by the method of coating as claimed in any one of claims 14 through 17.